

Appl. No. 10/774,326
Amend. Dated April 28 2006
Reply to Office Action of February 15, 2006

Attorney Docket No. 81846.0035
Customer No.: 26021

REMARKS

This application has been carefully reviewed in light of the Office Action dated February 15, 2006. Claims 1, 4-5, 7, 13-17 and 21-24 remain in this application. Claims 1, 7, 13 and 17 are the independent claims. Claims 1, 4, 7, 13-14 and 17 have been amended. It is believed that no new matter is involved in the arguments amendments presented herein. Reconsideration and entrance of the amendment in the application are respectfully requested.

Non-Art-Based Rejections

Claims 4 and 13-16 were rejected under 35 USC §112, second paragraph, for indefiniteness. In response, these claims have been amended to comply with 35 USC §112, second paragraph. Reconsideration and withdrawal of the above rejections are respectfully requested.

Art-Based Rejections

Claims 13-17 were rejected under 35 USC §102(b) over JP 2000-226908 (Hiroshi); Claim 7 was rejected under 35 USC §102(b) over JP 11-200561 (Yoshitaka); Claims 1, 4-5, 7 and 21-22 were rejected under 35 USC §103(a) over Yoshitaka in view of US 6,525,264 (Ouchida); Claim 23 was rejected under 35 USC §103(a) over Yoshitaka in view of Ouchida and EP 1071139 A2 (Nakazima); Claim 24 was rejected under 35 USC §103(a) over Yoshitaka in view of Ouchida and Hiroshi. Applicant respectfully traverses the rejections and submits that the claims herein are patentable in light of the clarifying amendments above and arguments below.

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The Hiroshi Reference

Hiroshi is directed to a solar battery module fixed to base material of roof tile and to preventing the solar battery module from floating up from the roof tile by wind force blowing on the roof. (*See Hiroshi, Abstract; Paragraph [0007]*).

The Yoshitaka Reference

Yoshitaka is directed to a solar cell holding tile that is positioned on a sheathing roof board by utilizing a batten for holding a tile. (*See Yoshitaka, Abstract; Paragraphs [0004]-[0008]*).

The Ouchida Reference

Ouchida is directed to a thin-film solar cell module. The thin-film solar cell module of a light transmission type includes a light-transmissive substrate, a front electrode layer, a photovoltaic conversion layer and a rear electrode layer. (*See Ouchida, Col. 3, lines 16-30*).

The Nakazima Reference

Nakazima is directed to mounting a photovoltaic cell module to a tile body. (*See Nakazima, Abstract; Paragraphs [0019]-[0022]*).

The Claims are Patentable Over the Cited References

The present application is generally directed to solar cell technology for building applications.

Claim 1:

As defined by amended independent Claim 1, a solar cell module includes a base member. A solar cell is provided on an upper surface of the base member such that a lower surface of the solar cell is positioned above and is mounted to the upper

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surface of the base member. An insulating support member is provided on a lower surface of the base member and configured to be laid together with tiles on the roof of a building. The base member is rectangular and includes a ridge-side surface projecting downwards with respect to a surface of a roof panel for mounting the solar cell module, an eaves-side surface, a trough-side surface and an anti-trough-side surface. The solar cell module includes a projecting part provided on the trough-side surface and the anti-trough-side surface of the base member, along the ridge-side to the eaves-side of the roof, and configured to overlap a trough-section of an adjacent tile or the trough section of an adjacent solar module.

The applied references do not disclose or suggest the features of the present invention as defined by amended independent Claim 1. In particular, the applied references do not disclose or suggest, "a solar cell provided on an upper surface of the base member such that a lower surface of the solar cell is positioned above and is mounted to the upper surface of the base member," as required by amended independent Claim 1.

In the Office Action, the Examiner purports that Yoshitaka ('561) discloses that the surfaces of slot 3 are at the upper surface of frame 1 and the portion of slot 3 near reference sign 3B that contacts the rear of solar cell 2 is at the upper surface of frame 1. Applicant respectfully disagrees.

In FIG. 2, Yoshitaka discloses tarpaulin 5 is mounted to the upper surface of cell frame 1 and photocell 2 is mounted within a recess formed below the upper surface of cell frame 1. According to Yoshitaka, tarpaulin 5 prevents wear of the top face (upper surface) section of cell frame 1. (*See Yoshitaka; paragraphs 12, 29 and 30*). As clearly shown in FIG. 2, the recess comprises fixed slot 3, which is formed below the upper surface of cell frame 1. Accordingly, any surfaces of fixed

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slot 3 are positioned below the upper surface of cell frame 1. Clearly, cell frame 1 cannot have two separate upper surfaces or top-faces.

In contrast to Yoshitaka, amended independent Claim 1 of the present invention requires that a lower surface of the solar cell is positioned above and is mounted to the upper surface of the base member. As shown in FIGS. 1-3, the present invention discloses that solar cell 10 is positioned above and is mounted to the upper surface of base member 1. This allows solar cell 10 to be easily mounted to base member 1. Yoshitaka does not disclose this feature.

Moreover, Applicant respectfully disagrees with the Examiner's assertion that the term "upper surface" is broad and does not distinguish over FIG. 2 of Yoshitaka. With reference to FIGS. 1-3, Claim 1 of the present invention requires that solar cell module 10 is positioned above and mounted to the upper surface of base member 1. As shown in FIGS. 1-3, the present invention does not disclose or suggest that solar cell 10 is positioned and mounted within a recess formed below the upper surface of base member 1.

Yoshitaka does not disclose or suggest this feature of the present invention as required by amended independent Claim 1, and the ancillary Ouchida and Nakazima references do not remedy the deficiencies of Yoshitaka.

Claim 7:

As defined by amended independent Claim 7, a method of laying solar cell modules together with tiles on the roof of a building includes laying a separate waterproof member having approximately the same height as the tiles and a width narrower than that of the tiles between each solar cell module and one tile which are laid adjacent in the direction of a gradient of the roof. The separate waterproof member comprises a rectangular box that opens at a lower portion thereof. The separate waterproof member has a trough section on one side. The trough section

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renders waterproof a junction between each solar cell module and the one tile, which are laid adjacent in the direction of the gradient of the roof. The separate waterproof member overlaps one side of a solar cell module and the one tile.

The applied references do not disclose or suggest the features of the present invention as defined by amended independent Claim 7. In particular, the applied references do not disclose or suggest, "laying a separate waterproof member" and "said separate waterproof member comprises a rectangular box that opens at a lower portion thereof," as required by amended Claim 7.

In the Office Action, the Examiner asserts that tarpaulin 4 of Yoshitaka functions as a waterproof member. According to Yoshitaka, tarpaulin 4 is an elongated strip of material that is stuck on the inferior surface of tongue of the front edge of water return 12C. (*See Yoshitaka; FIGS. 2, 10; paragraph 8, 12*).

In contrast to Yoshitaka, amended independent Claim 7 of the present invention requires laying a separate waterproof member, wherein the separate waterproof member comprises a rectangular box that opens at a lower portion thereof. As shown in FIGS. 5A-5B, the present invention discloses that separate waterproof member 20 comprises a rectangular box that is bottomless. (*See Specification, page 16, lines 18-27*).

Yoshitaka does not disclose or suggest this feature of the present invention as required by amended independent Claim 7, and the ancillary Ouchida reference does not remedy the deficiencies of Yoshitaka.

Claim 13:

As defined by independent Claim 13, a method of laying solar cell modules together with tiles on a roof panel includes laying a solar cell module at upper edges of the tiles laid on the roof so that an upper portion of a ridge-side of the tiles overlaps an eaves-side of the solar cell module. Fastening strips are arranged to

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prevent solar cell modules from being blown off between a lower portion of the eaves-side of the solar cell module and the upper portion of the ridge-side of the tiles. The fastening strips are engaged to the lower portion of the eaves-side of the solar cell module and the upper portion of the ridge-side of the tiles. The fastening strips include a rectangular main part and at least two rising parts that extend from the main part from at least two sides of the main part.

The applied references do not disclose or suggest the features of the present invention as defined by amended independent Claim 13. In particular, the applied references do not disclose or suggest, "wherein the fastening strips comprise a rectangular main part and at least two rising parts that extend from the main part from at least two sides of the main part," as required by amended Claim 13.

In FIG. 2, Hiroshi discloses a fastener 8 that holds and secures the periphery of solar cell module 4 to roofing tile 2. As shown in FIG. 4, fastener 8 includes base portions 30, 35 with a single protruding portion 28 extending therefrom. Fastener 8 of Hiroshi is structurally different and does not function in the same manner as fastening strip 81 of the present invention.

In contrast to Hiroshi, the claims of the present invention require fastening strips to include a rectangular main part and at least two rising parts that extend from the main part from at least two sides of the main part. As shown in FIG. 22A, fastening strips 81 are arranged between the lower part (the eaves-side) of solar cell module 61 and the upper part (the ridge-side) of tile 93 and is intended to engage the lower part (eaves-side) of solar cell module 61 with the upper part (ridge-side) of tile 93. Moreover, as shown in FIG. 23A, fastening strip 81 includes a rectangular main part 82 and at least two rising parts 83 that extend from main part 82 from at least two sides of main part 82.

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Hiroshi does not disclose or suggest these features of the present invention as required by amended independent Claim 13.

Since the applied references do not disclose or suggest the above features of the present invention as required by amended independent Claims 1, 7 and 13, those references cannot be said to anticipate nor render obvious the invention which is the subject matter of those claims.

Accordingly, independent Claims 1, 7, and 13, as amended, are believed to be in condition for allowance and such allowance is respectfully requested.

Applicant respectfully submits that independent Claim 17, as amended, is allowable for at least the same reasons as discussed above with reference to amended independent Claim 13 and such allowance is respectfully requested.

The remaining claims 4-5, 14-16 and 21-24 depend either directly or indirectly from independent Claims 1, 7, 13 and 17 and recite additional features of the present invention which are neither disclosed nor fairly suggested by the applied references and are also believed to be in condition for allowance and such allowance is respectfully requested.

Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (213) 337-6809 to discuss the steps necessary for placing the application in condition for allowance.

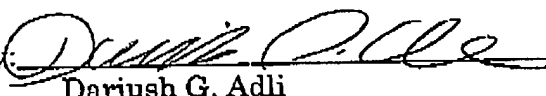
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Respectfully submitted,
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